

What is claimed is:

1. A connector for an elongated member, comprising:  
a body;  
an opening in the body configured to hold the elongated member;  
an engager; and  
a cam system configured to extend the engager into the opening to couple the body to the elongated member.
2. The connector of claim 1, wherein the engager comprises a surface of the cam system.
3. The connector of claim 1 wherein the engager further comprises a surface that contacts the elongated member, and wherein a portion of the surface is textured to increase a coefficient of friction between the surface and the elongated member.
4. The connector of claim 1, wherein a portion of a surface defining the opening is textured to increase a coefficient of friction between the surface and the elongated member.
5. The connector of claim 1, wherein a portion of the cam system is angulated within the body substantially perpendicular to a longitudinal axis of the body.
6. The connector of claim 1, wherein a portion of the cam system is angulated within the body at an angle greater than about 45° relative to a longitudinal axis of the body.
7. The connector of claim 1, wherein a portion of the cam system is angulated within the body at an angle greater than about 60° relative to a longitudinal axis of the body.
8. The connector of claim 1, wherein the engager extends into the opening when the cam system is rotated, and wherein a rotation range of the cam system is limited.

9. The connector of claim 8 wherein the rotation range of the cam system is limited to less than about 360°.

10. The connector of claim 8 wherein the rotation range of the cam system is limited to less than about 180°.

11. The connector of claim 8 wherein the rotation range of the cam system is limited to less than about 90°.

12. The connector of claim 1, further comprising a vibrational indicator that informs a user that the cam system is engaged.

13. The connector of claim 1, further comprising a visual indicator that informs a user that the cam system is engaged.

14. The connector of claim 13, further comprising a drive tool that activates the cam system, and wherein the visual indicator is a position of a handle of a drive tool relative to a position of the elongated member.

15. The connector of claim 1, further comprising a second opening in the body configured to hold a second elongated member.

16. The connector of claim 15, wherein the body is substantially unbendable.

17. The connector of claim 15, wherein the body is bendable to allow adjustment of the opening relative to the second opening.

18. The connector of claim 15, wherein the cam system is positioned between the opening and the second opening.

19. The connector of claim 15, wherein the body comprises a first section configured to move relative to a second section, and further comprising a fastener configured to inhibit movement of the first section relative to the second section.

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20. The connector of claim 1, wherein the connector is a transverse connector of a bone stabilization system.

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21. The connector of claim 1, wherein the connector is a transverse connector of a spinal stabilization system.

22. The connector of claim 1, wherein the body comprises a first section and a second section, wherein a position of the first section is adjustable relative to the second section, and further comprising a fastening system configured to fix the position of the first section relative to the second section during use.

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23. An engaging mechanism for coupling a connector to an elongated member, comprising:

a cam system in the connector, the cam system configured to extend an engager into an opening during use to couple the connector to the elongated member.

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24. The engaging mechanism of claim 23, wherein removal of a cam system from the connector is inhibited.

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25. The engaging mechanism of claim 23, wherein the engager comprises a surface of the cam system.

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26. The engaging mechanism of claim 23, wherein a contact surface of the engager that couples the connector to the elongated member comprises a textured surface.

27. The engaging mechanism of claim 23, wherein a portion of a surface of the opening that contacts the elongated member is textured.

28. The engaging mechanism of claim 23, wherein the cam system is configured to couple the connector to the elongated member when the cam system is rotated.

29. The engaging mechanism of claim 23, wherein the cam system is configured to couple the transverse connector to the elongated member when the cam system is rotated, and wherein a rotation range of the cam system is limited.

30. The engaging mechanism of claim 29 wherein the rotation range of the cam system is limited to less than about 360°.

31. The engaging mechanism of claim 29 wherein the rotation range of the cam system is limited to less than about 180°.

32. The engaging mechanism of claim 29 wherein the rotation range of the cam system is limited to less than about 90°.

33. The engaging mechanism of claim 23, wherein the cam system is angulated within the transverse connector substantially perpendicular to a longitudinal axis of the transverse connector.

34. The engaging mechanism of claim 23, wherein the cam system is angulated within the transverse connector at an angle greater than about 45° relative to a longitudinal axis of the transverse connector and less than perpendicular to the longitudinal axis.

35. The engaging mechanism of claim 23, wherein the cam system is angulated within the transverse connector at an angle greater than about 60° relative to a longitudinal axis of the transverse connector and less than perpendicular to the longitudinal axis.

36. The engaging mechanism of claim 23, wherein the elongated member opening includes an open side that allows the elongated member to be top loaded onto the elongated member.

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37. The engaging mechanism of claim 23, wherein a drive tool is used to rotate the cam system.

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38. The engaging mechanism of claim 37, wherein a position of the drive tool relative to the elongated member indicates if the transverse connector has been coupled to the elongated member.

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39. The engaging mechanism of claim 37 wherein a handle of the drive tool has an elongated portion that is substantially aligned with the elongated member when the transverse connector is coupled to the elongated member.

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40. The engaging mechanism of claim 23, further comprising an indicator configured to vibrate when the cam system is rotated.

41. The engaging mechanism of claim 41, wherein the indicator comprises a pin that contacts a portion of the cam system.

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42. A transverse connector comprising:  
a body;  
an opening in the body configured to accept an elongated member;  
a cam system in communication with the opening; and  
an engager configured to extend into the opening to couple the elongated member to the body when the cam system is activated.

43. The transverse connector of claim 42, wherein the engager is a surface of the cam system.

44. The transverse connector of claim 42, wherein a surface of the body defining the opening is textured.

45. The transverse connector of claim 42, wherein the body includes an indentation that allows the body to be bent.

46. The transverse connector of claim 42, wherein removal of a cam system from the body is inhibited.

47. The transverse connector of claim 42, wherein a contact surface of the engager that couples the body to the elongated member comprises a textured surface.

48. The transverse connector of claim 42, wherein the cam system is configured to couple the body to the elongated member when the cam system is rotated.

49. The transverse connector of claim 42, wherein the cam system is configured to couple the body to the elongated member when the cam system is rotated, and wherein a rotation range of the cam system is limited.

50. The transverse connector of claim 49 wherein the rotation range of the cam system is limited to less than about 360°.

51. The transverse connector of claim 49 wherein the rotation range of the cam system is limited to less than about 180°.

52. The transverse connector of claim 49 wherein the rotation range of the cam system is limited to less than about 90°.

53. The transverse connector of claim 42, wherein the cam system is angulated within the body substantially perpendicular to a longitudinal axis of the body.

5 54. The transverse connector of claim 42, wherein the cam system is angulated within the body at an angle greater than about 45° relative to a longitudinal axis of the body and less than perpendicular to the longitudinal axis.

10 55. The transverse connector of claim 42, wherein the cam system is angulated within the body at an angle greater than about 60° relative to a longitudinal axis of the body and less than perpendicular to the longitudinal axis.

15 56. The transverse connector of claim 42, wherein the opening includes an open side that allows the elongated member to be top loaded onto the elongated member.

20 57. The transverse connector of claim 42, wherein a drive tool is used to rotate the cam system.

25 58. The transverse connector of claim 57, wherein a position of the drive tool relative to the elongated member indicates if the body has been coupled to the elongated member.

30 59. The transverse connector of claim 57 wherein a handle of the drive tool has an elongated portion that is substantially aligned with the elongated member when the transverse connector is coupled to the elongated member.

60. The transverse connector of claim 42, further comprising a second opening in the body configured to couple to a second elongated member.

61. The transverse connector of claim 60, wherein the body is substantially unbendable.

62. The transverse connector of claim 60, wherein the body is bendable to allow adjustment of the opening relative to the second opening.

63. The transverse connector of claim 60, wherein the cam system is positioned between the opening and the second opening.

64. The transverse connector of claim 60, wherein the body comprises a first section configured to move relative to a second section, and further comprising a fastener configured to inhibit movement of the first section relative to the second section.

65. The transverse connector of claim 42, wherein the connector is a transverse connector of a bone stabilization system.

66. The transverse connector of claim 42, wherein the connector is a transverse connector of a spinal stabilization system.

67. The transverse connector of claim 42, wherein the body comprises a first section and a second section, wherein a position of the first section is adjustable relative to the second section, and further comprising a fastening system configured to fix the position of the first section relative to the second section during use.

68. The transverse connector of claim 67, wherein the fastening system comprises a collet and a collar, and wherein the collar is compressed onto the collet to fix the position of the first section relative to the second section.

69. The transverse connector of claim 67, wherein the fastening system comprises a setscrew.

70. A connector, comprising:



a body;  
a first opening in the body;  
a second opening in the body; and  
a cam system in communication with the first opening, wherein the cam system is  
5 configured to extend an engager into the first opening.

71. The connector of claim 70, wherein the cam system is positioned within the body  
between the first opening and the second opening.

10 72. The connector of claim 71, wherein a distance between a center of an elongated  
member positioned in the first opening and a center of an elongated member positioned in the  
second opening is greater than about 15 millimeters.

15 73. The connector of claim 71, wherein a distance between a center of an elongated  
member positioned in the first opening and a center of an elongated member positioned in the  
second opening is less than about 45 millimeters.

20 74. The connector of claim 70, wherein the cam system is positioned within the body so  
that the cam system is not located between the first opening and the second opening.

25 75. The connector of claim 74, wherein a distance between a center of an elongated  
member positioned in the first opening and a center of an elongated member positioned in the  
second opening is greater than about 5 millimeters.

30 76. The connector of claim 74, wherein a distance between a center of an elongated  
member positioned in the first opening and a center of an elongated member positioned in the  
second opening is less than about 30 millimeters.

77. The connector of claim 70, wherein a longitudinal axis of the cam system is located  
substantially perpendicular to a longitudinal axis of the body.

78. The connector of claim 70, wherein a longitudinal axis of the cam system is angulated within the body at a non-perpendicular angle relative to a longitudinal axis of the body.

5 79. The connector of claim 78, wherein the longitudinal axis of the cam system is angled at an angle between about 40° and about 90° with respect to the longitudinal axis of the body.

80. The connector of claim 78, wherein the longitudinal axis of the cam system is angled at an angle between about 60° and about 90° with respect to the longitudinal axis of the body.

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81. The connector of claim 70, wherein the engager extends into the opening when the cam system is rotated, and wherein a rotation range of the cam system is limited.

82. The connector of claim 81, wherein the rotation range of the cam system is limited to less than about 360°.

83. The connector of claim 81, wherein the rotation range of the cam system is limited to less than about 180°.

20 84. The connector of claim 81, wherein the rotation range of the cam system is limited to less than about 90°.

85. The connector of claim 70, further comprising a vibrational indicator that informs a user that the cam system is engaged.

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86. The connector of claim 70, further comprising a visual indicator that informs a user that the cam system is engaged.

87. The connector of claim 86, further comprising a drive tool that activates the cam system, and wherein the visual indicator is a position of a handle of a drive tool relative to a position of the elongated member.

88. The connector of claim 70, wherein the body comprises a first section configured to move relative to a second section, and further comprising a fastener configured to inhibit movement of the first section relative to the second section.

89. The connector of claim 70 wherein the connector is a transverse connector of a bone stabilization system.

90. The connector of claim 70, wherein the connector is a transverse connector of a spinal stabilization system.

91. A bone stabilization system, comprising:  
a first elongated member coupled to bone by a first fixation element;  
a second elongated member positioned adjacent to the first elongated member and coupled to bone by a second fixation element;  
a connector coupled to the first elongated member by a cam system.

92. The system of claim 91, wherein the connector further comprises an engagement system configured to couple the connector to the second elongated member.

93. The system of claim 92, wherein the engagement system comprises a cam system.

94. The system of claim 91, wherein the connector further comprises an engagement system configured to couple the connector to the second fixation element.

95. The system of claim 91, wherein the first elongated member and the second elongated member are portions of a unitary, bent and contoured member.

96. The system of claim 91, wherein the connector has a substantially fixed length.

97. The system of claim 96, wherein the length of the connector may be adjusted by bending the connector.

98. The system of claim 97, wherein a body of the connector includes an indentation to facilitate bending the connector.

99. The system of claim 91, wherein the connector comprises a first section and a second section, wherein a position of the first section is adjustable relative to the second section, and wherein a fastening system inhibits movement of the first section relative to the second section during use.

100. The system of claim 99, wherein the fastening system comprises a collet and a collar, and wherein the collar is friction locked to the collet to inhibit movement of the first section relative to the second section.

101. The system of claim 99, wherein the fastening system comprises a setscrew.

102. A method of forming a connector comprising:  
placing a cam system within a cam system opening in a body of the connector,  
wherein a threaded connection is not formed between the cam system and the body.

103. The method of claim 102, further comprising inhibiting removal of the cam system from the cam system opening.

104. A connector produced by the method of claim 102.

105. A method of attaching a transverse connector to an elongated member, comprising:

positioning an opening of the transverse connector at a location along a length of the elongated member; and

engaging a cam system to extend an engager into the opening.

- 5      106. The method of claim 105, further comprising:  
positioning a second opening of the transverse connector at a location along a length of a second elongated member; and  
coupling the transverse connector to the second elongated member.

- 10      107. The method of claim 106, wherein the elongated member and the second elongated member are portions of a unitary, bent and contoured member.

- 15      108. An adjustable connector for attachment to an elongated member of a bone stabilization system, comprising:  
a first section;  
a second section, wherein the first section and the second section are coupled to together, and wherein the first section and the second section are allowed to move within a limited range of rotational motion relative to each other that is less than 360°; and  
a fastener configured to inhibit rotational movement of the first section relative to the second section during use.

- 20      109. The connector of claim 108, wherein the first section and the second section are inhibited from becoming uncoupled.

- 25      110. The connector of claim 108, wherein the first section further comprises a collet, and wherein the fastener comprises a collar that is configured to compress the collet.

- 30      111. The connector of claim 110, wherein the collar is coupled to the collet to limit a distance that the collar can be moved away from the collet.

112. The connector of claim 108, wherein the fastener comprises a setscrew.

113. The connector of claim 108, wherein the first section and the second section are configured to be angulated relative to each other within a limited range of angulation that is less than about 60°, and wherein the fastener inhibits change in angulation during use.

114. The connector of claim 113, wherein a lower limit of the limited range of angulation is about 0°.

115. The connector of claim 113, wherein a lower limit of the limited range of angulation is greater than 0°.

116. The connector of claim 108, wherein the limited range of rotational motion is less than about 90°.

117. The connector of claim 108, wherein the limited range of rotational motion is less than about 60°.

118. The connector of claim 108, wherein the limited range of rotational motion is less than about 40°.

119. The connector of claim 108, further comprising a lining positioned between a portion of the first section and a portion of the second section.

120. The connector of claim 108, wherein the first section further comprises a fastening system, the fastening system configured to couple the first section to the elongated member.

121. The connector of claim 120, wherein the fastening system comprises an opening in the first section configured to accept the elongated member, and a setscrew.

122. The connector of claim 120, wherein the second section further comprises a fastening system configured to couple the second section to a second elongated member.

123. The connector of claim 122, wherein the elongated member and the second elongated member are portions of a unitary, contoured member.

124. The connector of claim 122, wherein a distance between the first section fastening system and the second section fastening system is adjustable, and wherein the fastener inhibits distance adjustment during use.

125. An adjustable connector comprising:

a first section comprising a fastening system, the fastening system configured to couple the first section to an elongated member;

a second section, wherein the first section and the second section are coupled to together, wherein the first section and the second section are configured to be angulated relative to each other within a limited range of angulation, and wherein the limited range of angulation is less than about 60°; and

a fastener configured to inhibit angulation adjustment of the first section relative to the second section during use.

126. The connector of claim 125, wherein the first section and the second section are inhibited from becoming uncoupled.

127. The connector of claim 125, wherein the fastener comprises a setscrew.

128. The connector of claim 125, wherein a lower limit of the limited range of angulation is about 0°.

129. The connector of claim 125, wherein a lower limit of the limited range of angulation is greater than 0°.

130. The connector of claim 125, wherein the first section and the second section are configured to rotate relative to each other.

131. The connector of claim 125, wherein the first section and the second section are configured to rotate relative to each other within a limited range of rotational motion less than about 90°.

132. The connector of claim 125, wherein the first section and the second section are configured to rotate relative to each other within a limited range of rotational motion less than about 60°.

133. The connector of claim 125, wherein the first section and the second section are configured to rotate relative to each other within a limited range of rotational motion less than about 40°.

134. The connector of claim 125, further comprising a lining positioned between a portion of the first section and a portion of the second section.

135. The connector of claim 125, wherein the first section further comprises a fastening system, the fastening system configured to couple the first section to the elongated member.

136. The connector of claim 135, wherein the fastening system comprises an opening in the first section configured to accept the elongated member, and a setscrew.

137. The connector of claim 135, wherein the second section further comprises a fastening system configured to couple the second section to a second elongated member.

138. The connector of claim 137, wherein the elongated member and the second elongated member are portions of a unitary, contoured member.



139. The connector of claim 137, wherein a distance between the first section fastening system and the second section fastening system is adjustable, and wherein the fastener inhibits distance adjustment during use.

140. An adjustable connector for attachment to an elongated member of a bone stabilization system, comprising:

a first section having a hollow portion and a collet;  
a second section having a connecting member configured to fit within the hollow portion; and  
a collar configured to compress the collet to inhibit motion of the first section relative to the second section.

141. The connector of claim 140, wherein a range of rotational motion of the first section relative to the second section is limited to less than 360°.

142. The connector of claim 140, wherein a range of rotational motion of the first section relative to the second section is limited to less than 90°.

143. The connector of claim 140, wherein a range of rotational motion of the first section relative to the second section is limited to less than 40°.

144. The connector of claim 140, wherein the first section is inhibited from being removed from the second section.

145. The connector of claim 140, wherein the collar is linked to the collet to limit a range of motion of the collar relative to the collet.

146. The connector of claim 140, wherein the first section further comprises a fastening system, the fastening system configured to couple the first section to the elongated member.

147. The connector of claim 146, wherein the fastening system comprises an opening in the first section configured to accept the elongated member, and a setscrew.

5 148. The connector of claim 146, wherein the second section further comprises a fastening system configured to couple the second section to a second elongated member.

149. The connector of claim 148, wherein the elongated member and the second elongated member are portions of a unitary, contoured member.

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150. The connector of claim 148, wherein a distance between the first section fastening system and the second section fastening system is adjustable, and wherein the fastener inhibits distance adjustment during use.

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151. The connector of claim 140, further comprising a compression instrument configured to compress the collar against the collet.

152. The connector of claim 140, wherein a surface of the collar that contacts the collet comprises texturing.

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153. A connector for a bone stabilization system, comprising:  
a first section having a holder;  
a second section having a connecting member, wherein a portion of the connecting member is positioned in the holder  
a lining between the connecting member and the holder; and  
a fastener configured to fix a position of the connecting member relative to the holder during use.

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154. The connector of claim 153, wherein the first section is configured to rotate relative to the second section.

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155. The connector of claim 153, wherein a range of rotation of the first section relative to the second section is limited to less than about 90°.

5 156. The connector of claim 153, wherein a range of rotation of the first section relative to the second section is limited to less than about 40°.

157. The connector of claim 153, wherein a range of rotation of the first section relative to the second section is limited to less than about 20°.

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158. The connector of claim 153, wherein the first section is configured to be angulated relative to the second section.

159. The connector of claim 153, wherein a range of angulation of the first section relative to the second section is less than about 60°.

160. The connector of claim 159, wherein a lower limit of angulation of the first section relative to the second section is about 0°.

20 161. The connector of claim 159, wherein a lower limit of angulation of the first section relative to the second section is greater than 0°.

162. The connector of claim 153, wherein a range of angulation of the first section relative to the second section is less than about 20°.

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163. The connector of claim 162, wherein a lower limit of angulation of the first section relative to the second section is about 0°.

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164. The connector of claim 162, wherein a lower limit of angulation of the first section relative to the second section is greater than 0°.

165. The connector of claim 153, wherein the first section further comprises a fastening system, the fastening system configured to couple the first section to the elongated member.

5 166. The connector of claim 165, wherein the fastening system comprises an opening in the first section configured to accept the elongated member, and a setscrew.

167. The connector of claim 165, wherein the second section further comprises a fastening system configured to couple the second section to a second elongated member.

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168. The connector of claim 167, wherein the elongated member and the second elongated member are portions of a unitary, contoured member.

15 169. The connector of claim 167, wherein a distance between the first section fastening system and the second section fastening system is adjustable, and wherein the fastener inhibits distance adjustment during use.

170. A bone stabilization system, comprising:

a first elongated member coupled to bone by a first fixation element;

20 a second elongated member positioned adjacent to the first elongated member and coupled to bone by a second fixation element; and

a connector coupled to the first elongated member by a fastening system, the connector comprising:

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a second section, wherein the first section and the second section are coupled to together, and wherein the first section and the second section are allowed to move within a limited range of rotational motion relative to each other that is less than 360°; and

a fastener configured to inhibit rotational movement of the first section relative to the second section during use.

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171. The system of claim 170, wherein the first elongated member and the second elongated member are portions of a unitary, contoured member.

172. The system of claim 170, wherein the first section and the second section are inhibited from becoming uncoupled.

173. The system of claim 170, wherein the first section further comprises a collet, and wherein the fastener comprises a collar that is configured to compress the collet.

174. The system of claim 173, wherein the collar is coupled to the collet to limit a distance that the collar can be moved away from the collet.

175. The system of claim 170, wherein the fastener comprises a setscrew.

176. The system of claim 170, wherein the first section and the second section are configured to be angulated relative to each other within a limited range of angulation that is less than about 60°, and wherein the fastener inhibits change in angulation during use.

177. The system of claim 176, wherein a lower limit of the limited range of angulation is about 0°.

178. The system of claim 176, wherein a lower limit of the limited range of angulation is greater than 0°.

179. The system of claim 170, wherein the limited range of rotational motion is less than about 90°.

180. The system of claim 170, wherein the limited range of rotational motion is less than about 60°.

181. The system of claim 170, wherein the limited range of rotational motion is less than about 40°.

182. The system of claim 170, further comprising a lining positioned between a portion of the first section and a portion of the second section.

183. The system of claim 170, wherein the fastening system comprises an opening in the first section configured to accept the elongated member, and a setscrew.

184. The system of claim 170, wherein the second section further comprises a fastening system configured to couple the second section to a second elongated member.

185. The system of claim 184, wherein a distance between the first section fastening system and the second section fastening system is adjustable, and wherein the fastener inhibits distance adjustment during use.

186. A method of attaching a connector to a bone stabilization system, comprising:  
coupling a fastening system of a first section of the connector to an elongated member;

adjusting a position of a second section of the connector relative to the first section, wherein the first section and the second section are connected together;

coupling the second section to a second elongated member, wherein the first elongated member and the second elongated member comprise portions of a unitary, contoured member;

engaging a fastener to fix a position of the first section relative to the second section.

187. A connector, comprising:

a first section having an opening and a cam system, wherein the cam system is configured to extend an engager into the opening to secure the first section to an elongated member positioned in the opening;

a second section coupled to the first section, the coupling configured to permit movement of the first section and the second section relative to each other; and

a fastener configured to inhibit movement of the first section relative to the second section.

188. The connector of claim 187, wherein the first section and the second section are configured to rotate relative to each other.

189. The connector of claim 187, wherein a range of rotation of the first section and the second section relative to each other is limited to less than about a 90° range of motion.

190. The connector of claim 187, wherein a range of rotation of the first section and the second section relative to each other is limited to less than about a 40° range of motion.

191. The connector of claim 187, wherein a range of rotation of the first section and the second section relative to each other is limited to less than about a 20° range of motion.

192. The connector of claim 187, wherein the first section and the second section are configured to be angulated relative to the each other.

193. The connector of claim 187, wherein a range of angulation of the first section and the second section relative to each other is less than about 30°.

194. The connector of claim 193, wherein a lower limit of angulation is about 0°.

195. The connector of claim 193, wherein a lower limit of angulation is greater than 0°.

196. The connector of claim 195, wherein a lower limit of angulation of the first section relative to the second section is about 0°.

197. The connector of claim 187, further comprising a lining between the first section and the second section.

198. The connector of claim 187, wherein a portion of the cam system comprises roughening.

199. The connector of claim 187, wherein the first section is inhibited from being removed from the second section.

200. The connector of claim 187, wherein a portion of the cam system is angulated within the body substantially perpendicular to a longitudinal axis of the body.

201. The connector of claim 200, wherein a portion of the cam system is angulated within the body at an angle greater than about 45° relative to a longitudinal axis of the body.

202. The connector of claim 200, wherein a portion of the cam system is angulated within the body at an angle greater than about 60° relative to a longitudinal axis of the body.

203. The connector of claim 187, wherein the cam system is inhibited from being removed from the first section.

204. The connector of claim 187, wherein the cam system couples the elongated member to the first section when the cam system is rotated.

205. The connector of claim 187, wherein a rotational range of motion of the cam system is limited.



206. The connector of claim 205, wherein the rotational range of motion is limited to less than about 360°.

207. The connector of claim 205, wherein the rotational range of motion is limited to less than about 180°.

208. The connector of claim 205, wherein the rotational range of motion is limited to less than about 90°.

209. The connector of claim 187, further comprising a vibrational indicator that informs a user that the cam system is engaged.

210. The connector of claim 187, further comprising a visual indicator that informs a user that the cam system is engaged.

211. The connector of claim 13, further comprising a drive tool that activates the cam system, and wherein the visual indicator is a position of a handle of a drive tool relative to a position of the elongated member.

212. The connector of claim 187, wherein the second section further comprises an elongated member fastener, wherein a distance between a surface of the opening and the elongated member fastener is adjustable, and wherein the fastener inhibits adjustment of the distance during use.

213. The connector of claim 187, wherein the fastener comprises a setscrew.

214. A connector for a bone stabilization system, comprising:  
a first section comprising an opening, a cam system in communication with the opening, wherein the opening is configured to hold an elongated member and wherein the

cam system is configured to couple the elongated member to the first section by extending an engager into the opening;

a second section coupled to the first section, wherein a portion of the first section and a portion of the second section are configured to rotate relative to each other within a limited rotational range of motion that is less than 360°; and

a fastener configured to inhibit rotational movement of the first section and the second section relative to each other.

215. The connector of claim 214, wherein the range of rotational motion of the first section and the second section relative to each other is limited to less than about a 90° range of motion.

216. The connector of claim 214, wherein range of rotational motion of the first section and the second section relative to each other is limited to less than about a 40° range of motion.

217. The connector of claim 214, wherein range of rotational motion of the first section and the second section relative to each other is limited to less than about a 20° range of motion.

218. The connector of claim 214, wherein the first section and the second section are configured to be angulated relative to the each other and wherein the fastener inhibits angulation adjustment during use.

219. The connector of claim 214, wherein a range of angulation of the first section and the second section relative to each other is less than about 30°.

220. The connector of claim 219, wherein a lower limit of angulation is about 0°.

221. The connector of claim 219, wherein a lower limit of angulation is greater than 0°.

222. The connector of claim 214, further comprising a lining between the first section and the second section.

5 223. The connector of claim 214, wherein a portion of the cam system comprises roughening.

224. The connector of claim 214, wherein the first section is inhibited from being removed from the second section.

10 225. The connector of claim 214, wherein a portion of the cam system is angulated within the body substantially perpendicular to a longitudinal axis of the body.

226. The connector of claim 225, wherein a portion of the cam system is angulated within the body at an angle greater than about 45° relative to a longitudinal axis of the body.

227. The connector of claim 225, wherein a portion of the cam system is angulated within the body at an angle greater than about 60° relative to a longitudinal axis of the body.

20 228. The connector of claim 214, wherein the cam system is inhibited from being removed from the first section.

229. The connector of claim 214, wherein the cam system couples the elongated member to the first section when the cam system is rotated.

25 230. The connector of claim 214, wherein a rotational range of motion of the cam system is limited.

30 231. The connector of claim 230, wherein the rotational range of motion is limited to less than about 360°.

232. The connector of claim 230, wherein the rotational range of motion is limited to less than about 180°.

233. The connector of claim 230, wherein the rotational range of motion is limited to less than about 90°.

234. The connector of claim 214, further comprising a vibrational indicator that informs a user that the cam system is engaged.

235. The connector of claim 214, further comprising a visual indicator that informs a user that the cam system is engaged.

236. The connector of claim 235, further comprising a drive tool that activates the cam system, and wherein the visual indicator is a position of a handle of a drive tool relative to a position of the elongated member.

237. The connector of claim 214, wherein the second section further comprises an elongated member fastener, wherein a distance between a surface of the opening and the elongated member fastener is adjustable, and wherein the fastener inhibits adjustment of the distance during use.

238. The connector of claim 214, wherein the fastener comprises a setscrew.

239. A connector for a bone stabilization system, comprising:  
a first section comprising an opening, a cam system in communication with the opening, wherein the opening is configured to hold an elongated member and wherein the cam system is configured to couple the elongated member to the first section by extending an engager into the opening;

a second section coupled to the first section, wherein a portion of the first section and a portion of the second section are configured to be angulated within a limited range of motion that is less than about 30° relative to each other ; and

a fastener configured to inhibit movement of the first section and the second section relative to each other.

240. The connector of claim 239, wherein a range of rotation of the first section and the second section relative to each other is limited to less than about a 90° range of motion.

241. The connector of claim 239, wherein a range of rotation of the first section and the second section relative to each other is limited to less than about a 40° range of motion.

242. The connector of claim 239, wherein a range of rotation of the first section and the second section relative to each other is limited to less than about a 20° range of motion.

243. The connector of claim 239, wherein a lower limit of the limited range of motion is about 0°.

244. The connector of claim 239, wherein a lower limit of the limited range of motion is greater than 0°.

245. The connector of claim 239, further comprising a lining between the first section and the second section.

246. The connector of claim 239, wherein a portion of the cam system comprises roughening.

247. The connector of claim 239, wherein the first section is inhibited from being removed from the second section.

248. The connector of claim 239, wherein a portion of the cam system is angulated within the body substantially perpendicular to a longitudinal axis of the body.

249. The connector of claim 248, wherein a portion of the cam system is angulated within the body at an angle greater than about 45° relative to a longitudinal axis of the body.

250. The connector of claim 248, wherein a portion of the cam system is angulated within the body at an angle greater than about 60° relative to a longitudinal axis of the body.

251. The connector of claim 239, wherein the cam system is inhibited from being removed from the first section.

252. The connector of claim 239, wherein the cam system couples the elongated member to the first section when the cam system is rotated.

253. The connector of claim 239, wherein a rotational range of motion of the cam system is limited.

254. The connector of claim 253, wherein the rotational range of motion is limited to less than about 360°.

255. The connector of claim 253, wherein the rotational range of motion is limited to less than about 180°.

256. The connector of claim 253, wherein the rotational range of motion is limited to less than about 90°.

257. The connector of claim 239, further comprising a vibrational indicator that informs a user that the cam system is engaged.

258. The connector of claim 239, further comprising a visual indicator that informs a user that the cam system is engaged.

259. The connector of claim 258, further comprising a drive tool that activates the cam system, and wherein the visual indicator is a position of a handle of a drive tool relative to a position of the elongated member.

260. The connector of claim 239, wherein the second section further comprises an elongated member fastener, wherein a distance between a surface of the opening and the elongated member fastener is adjustable, and wherein the fastener inhibits adjustment of the distance during use.

261. The connector of claim 239, wherein the fastener comprises a setscrew.

262. A connector for a bone stabilization system, comprising:

a first section comprising an opening, a cam system in communication with the opening, and a connecting member, wherein the opening is configured to hold an elongated member and wherein the cam system is configured to couple the elongated member to the first section by extending an engager into the opening;

a second section comprising a holder adapted to hold a portion of the connecting member and allow movement of the holder and connecting member relative to each other; and

a fastener configured to inhibit movement of the connecting member and the holder relative to each other when in a first position, wherein the fastener in a second position allows the connecting member and the holder to be moved relative to each other.

263. The connector of claim 262, further comprising a lining between the holder and the connecting member.

264. The connector of claim 262, wherein the fastener in the second position allows rotation of a portion of the first section and a portion of the second section relative to each other.

5 265. The connector of claim 264, wherein a range of rotation of the portion of the first section relative and the portion of the second section is less than about 90°.

10 266. The connector of claim 262, wherein the fastener in the second position allows for angulation of a portion of the first section and a portion of the second section relative to each other.

267. The connector of claim 266, wherein a range of angulation of the portion of the first section and the portion of the second section relative to each other is less than about 30°.

15 268. The connector of claim 267, wherein a lower limit of the range of angulation is about 0°.

20 269. The connector of claim 267, wherein a lower limit of the range of angulation is greater than 0°.

25 270. A connector for a bone stabilization system, comprising:

a first section comprising an opening, a cam system in communication with the opening, and a holder, wherein the opening is configured to hold an elongated member and wherein the cam system is configured to couple the elongated member to the first section by extending an engager into the opening;

a second section comprising a connecting member, wherein a portion of the connecting member is adapted to be positioned within the holder, and wherein the connecting member and the holder may be moved relative to each other; and



a fastener configured to inhibit movement of the connecting member and the holder relative to each other when in a first position, wherein the fastener in a second position allows the connecting member and the holder to be moved relative to each other.

5 271. The connector of claim 270, wherein the fastener in the second position allows rotation of a portion of the first section and a portion of the second section relative to each other.

10 272. The connector of claim 271, wherein a range of rotation of the portion of the first section and the portion of the second section relative to each other is less than about 90°.

273. The connector of claim 270, wherein the fastener in the second position allows for angulation of a portion of the first section and a portion of the second section relative to each other.

274. The connector of claim 273 wherein a range of angulation of the portion of the first section and the portion of the second section relative to each other is less than about 30°.

275. The connector of claim 274, wherein a lower limit of the range of angulation is about 0°.

276. The connector of claim 274, wherein a lower limit of the range of angulation is greater than 0°.

25 277. A bone stabilization system, comprising:  
a first elongated member coupled to bone by a first fixation element;  
a second elongated member positioned adjacent to the first elongated member and coupled to bone by a second fixation element;  
a connector coupled to the first elongated member by a cam system.  
30 a first rod coupled to a bone by a fixation element;

a second rod coupled to bone by a second fixation element; and  
a connector comprising:

a first section having a cam system configured to extend an engager into an  
opening to couple the first elongated member to the first section;

a second section attached to the first section;

and a fastener configured to inhibit movement of the first section and the  
second section relative to each other during use.

278. The system of claim 277, wherein the first rod and the second rod are portions of a  
single contoured rod.

279. The system of claim 277, wherein the bone stabilization system is a spinal  
stabilization system.

280. A method of attaching a connector to a bone stabilization system, comprising:  
placing a cam system of a first section of the connector on an elongated member;  
engaging the cam system to attach the first section to the elongated member;  
adjusting a position of a second section of the connector relative to the first section,  
wherein the first section and the second section are connected together;  
coupling the second section to a second elongated member; and  
engaging a fastener to fix a position of the first section relative to the second section.

281. The method of claim 280, wherein engaging a fastener comprises tightening a  
setscrew.

282. The method of claim 280, wherein the elongated member and the second elongated  
member comprise portions of a unitary, contoured elongated member.